RE: Walpole Village Market, Walpole - NH, Possible EPA Evaluation of 1rst Generation Total Containment UG Piping in Service with E-10
Daniel, Robert
to:
Jack Hwang, JohnT Wilson
09/26/2012 11:56 AM
Cc:
Michael Pomes, Andrea Barbery, Rick Rogers, Karen Crumlish
Hide Details
From: "Daniel, Robert" <Robert.Daniel@des.nh.gov>
To: Jack Hwang/R3/USEPA/US@EPA, JohnT Wilson/ADA/USEPA/US@EPA,
Cc: Michael Pomes/R7/USEPA/US@EPA, Andrea Barbery/DC/USEPA/US@EPA, Rick Rogers/R3/USEPA/US@EPA, Karen Crumlish/R3/USEPA/US@EPA

5 Attachments

image001.gif 4 - premium stp sump - close-up of end-coupling.JPG

18-Cut STP-End Sections of Premium Piping for Shipment.JPG 9-Regular Gas - STP to Dispenser line.JPG

14-Cut Section of Regular Gas Piping - Green and Black Material.JPG

Hi Jack,
Following up on this… I acquired some pipe sections when I was out at the site on Friday (9-21-2012) and shipped them back to John Wilson in the container he provided. The contractor unfortunately proceeded with removing the existing pipe without my presence and did not keep the actual failed section intact (despite my request to do so). As previously discussed, the suspected actual product release location was at the pipe termination in the brass swage fitting within the premium gasoline STP sump. (Previous close-up picture attached.) As can be seen, the outer sheath of the piping material was completely disintegrated in this area. When the contractor went to remove the pipe from the STP connection, it reportedly did not take much effort for the pipe end to disengage from the swage fitting. It would seem fairly straightforward that the loss of the pipe material from the swage fitting compromised the tightness of the fitting and led to the loss of gasoline product from that location. From the failed premium line pipe (running from the STP to the first dispenser), I sent along the first five 2-foot sections of pipe on the STP end and several sections from the dispenser end. While the regular piping was not reported to have failed, the outer sheath of the piping was also significantly deteriorated in a number of locations and I sent along to John a number of sections from both the STP and dispenser ends. I've also attached some pictures of the regular piping for your viewing pleasure.

In NH, there are around 30 facilities required to take their yellow pipe out of service by June 30, 2013 (the deadline we imposed). I suspect we'll have plenty of similar pictures of pipe degradation if you are interested in more.

It's my understanding there's only a few states which have required the "yellow" piping to be taken out of service if in use with any ethanol blend (including E-10). In NH and other locations, even the supposed "alcohol compatible" second generation TC piping has been failing. Early generation flexible piping that was introduced in the early to mid-90's represents a huge concern considering that the UL-971 standard has been revised a number of times (and specifically with regard to allowable permeability). What may have been deemed compatible and meeting the standard at the time could not be installed now. This would seem to be a clear "red flag" from a compatibility evaluation standpoint and considering the widespread observed corrosion of components inside sumps (where gas/ethanol should not be present.)

Thanks for everyone's review and consideration.

-Bob
Robert A. Daniel, P.E.
NH Department of Environmental Services
Waste Management Division, Oil Compliance Section
Design Review Subsection
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095
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-----Original Message-----
From: Jack Hwang [mailto:Hwang.Jack@epamail.epa.gov]
Sent: Monday, September 10, 2012 1:17 PM
To: Daniel, Robert
Cc: JohnT Wilson; Michael Pomes; Barbery.Andrea@epa.gov; Rick Rogers; Karen Crumlish
Subject: Re: Walpole Village Market, Walpole - NH, Possible EPA Evaluation of 1rst Generation Total Containment UG Piping in Service with E-10

Robert,

Thank you for sending the pictures.
Have you managed to cut off some sections of failed pipes and kept them temporarily.
I know that Dr. Wilson of EPA ORD in Oklahoma sent to your office a cooler for you to ship those failed components back to ORD for temporary holding those field samples. Thanks. Jack

(See attached file: 1 - premium stp sump.JPG)(See attached file: 2 - premium stp sump - view accentuating bends in flex pipe.JPG)(See attached file: 3 - premium stp sump - side view of flex pipe toward sump entry.JPG)(See attached file: 4 - premium stp sump - close-up of end-coupling.JPG)

Jack Hwang
US EPA Region III in Philadelphia
215-814-3387 (Phone); 215-814-3163 (Fax)
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"Daniel, Robert" ---09/07/2012 11:50:28 AM---Hi Jack, I was out at the Walpole Village Market site yesterday (6-Sep-2012) and

From: "Daniel, Robert" <Robert.Daniel@des.nh.gov>
To: Jack Hwang/R3/USEPA/US@EPA
Cc: JohnT Wilson/ADA/USEPA/US@EPA
Date: 09/07/2012 11:50 AM
Subject: Walpole Village Market, Walpole - NH, Possible EPA Evaluation of 1rst Generation Total Containment UG Piping in Service with E-10

Hi Jack,
I was out at the Walpole Village Market site yesterday (6-Sep-2012) and am following up with some pictures and additional information from my visit. Some good news - it seems pretty clear that the piping failure was on the end of the flex pipe run located within the premium gasoline STP (submersible turbine pump) sump. The attached pictures show the degradation of the pipe and some awkward curves (I'm assuming from stresses associated with expansion/contraction and swelling). The piping was soft / squishy.

Additionally, my understanding was incorrect that they were going to begin work right away. The contractor informed me that they will actually begin piping replacement the week after next (week of September 17). In lieu of hearing anything different from you or John, I'll plan on getting at least the end piping sections (on both the STP

and dispenser ends) from both the premium gasoline piping as well as the regular gasoline piping. While the regular sump also shows significant corrosion on sump components, the level of degradation on the flex piping is not nearly as advanced as shown in the attached pictures within the premium sump. (I also have some pictures from the regular gasoline STP sump if you wish to see them.)

The contractor is fully aware of the interest in the piping samples and will preserve the condition as best they can during the pipe removal. It appears that the shipping container for the pipe sections will be arriving next week from John Wilson. If there's anything further, feel free to call or reply.

-Bob
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-----Original Message-----
From: Jack Hwang [mailto:Hwang.Jack@epamail.epa.gov]
Sent: Tuesday, September 04, 2012 4:05 PM
To: Daniel, Robert
Cc: JohnT Wilson; Michael Pomes; Rick Rogers; Karen Crumlish; Barbery.Andrea@epa.gov
Subject: Re: FW: Inspectors: Help EPA Investigate Biofuels Compatibility with UST Equipment

Dear Bob,

Nice talking to you on the phone and I understand that the pipe removal/replacement may take place this coming Thursday.
I spoke with Dr. John Wilson of EPA ORD Lab in Ada Oklahoma.
He would be willing to temporarily holding the samples in his lab.
He will send you a sample container (a cooler) for you to store the failed /failing components and ship the container back to him.
He can send it on Thursday with 2-day delivery. It should get to you in New Hampshire on Monday.
Do you want him to ship the container to the site or to your office?
Please let him know the shipping address.
Please write him an email or call him for additional shipping information/questions.
His contact info is

Dr. John Wilson
wilson.johnT@epa.gov
580-436-8534

Take many pictures at the site. Thanks. Jack

Jack Hwang
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"Daniel, Robert" ---09/04/2012 11:04:34 AM---Hi Jack, During the ASTSWMO alternative fuels workgroup meeting last week, I

From: "Daniel, Robert" <Robert.Daniel@des.nh.gov>
To: Jack Hwang/R3/USEPA/US@EPA
Date: 09/04/2012 11:04 AM
Subject: FW: Inspectors: Help EPA Investigate Biofuels Compatibility with UST Equipment

Hi Jack,
During the ASTSWMO alternative fuels workgroup meeting last week, I mentioned to you and the group that we recently had a reported failure of the Total Containment first-generation “yellow piping”. I’ve not yet been able to get any pictures of the piping condition. It has not yet been removed but I understand that they are looking to move forward sometime this week with piping replacement. I have reached out to them asking for pictures and that we have particular interest in seeing the section of failed piping. I also just spoke verbally with the ownership representative and they seem to be fine with EPA doing some forensics on the failed section of piping.

I’ve attached a copy of the notification (10-Aug-2012) we received that the piping had failed. Also attached is a copy of our letter (13-Jan-2012) that the piping needed to be taken out of service.

While NH and a few other states have taken action and made a case that the piping should be removed from any ethanol service (such as with E-10 in NH), it’s my understanding that many states (or the EPA) have not yet taken any such action. For example, attached is another recent e-mail string which shows the same piping in a failed/failing condition at a facility in Missouri. It seems that allowance of such piping to remain in service will lead to releases which could have been prevented by requiring removal of incompatible piping. It is for this reason that I bring forward this case for consideration in the forensic portion of your study. It’s worth noting that we also have had a number of failures of Total Containment’s second generation piping which was supposedly compatible with ethanol fuel. [Could be a part II study.]

Please let me know of your interest in this case and, if so, how this might best move forward. If there’s anything further, please feel free to call or reply. Otherwise, I’ll let you know once we have pictures. Thanks.

-Bob
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-----Original Message-----
From: Charles Reyes [mailto:charlesr@astswmo.org]
Sent: Monday, August 20, 2012 11:16 AM
To: Charles Reyes
Subject: FW: Inspectors: Help EPA Investigate Biofuels Compatibility with UST Equipment

EPA’s National UST Biofuels team is seeking assistance on research projects associated with biofuels. Information about their projects is provided below and attached.

Charles

From: Jack Hwang [mailto:Hwang.Jack@epamail.epa.gov]
Sent: Monday, August 20, 2012 10:22 AM
To: Audray Lincoln; Reed.Claudette@epamail.epa.gov; Janice Pearson; Jeff Pike; Larry Thomas; Margaret Stockdale; Peter Contreras; Rick Rogers; Steven Linder; Stuart Gray; Willie Kelley; Beth Deabay; Bill Truman; Dennis McChesney; Sherry Kamke; Sherry Kamke; Charles Reyes; Mahesh.Albuquerque@state.co.us; rxbrauks@gw.dec.state.ny.us
Cc: Karen Ellenberger; DePont.Lynn@epamail.epa.gov; Mark Barolo; Barbery.Andrea@epa.gov; Judy Barrows; William Lienesch; Erin Knighton; Barbara Grimm-Crawford; Roberts.Timothy-P@epamail.epa.gov; ChoYi Kwan; Susan Burnell; Robin Hughes; walker.tom@epa.gov; Judy Kertcher; Jack Hwang; Michael Pomes; Barbery.Andrea@epa.gov; Linda Gerber; Claire Willscher; Arturo Cisneros; Mark Restaino; Sherry Fuerst;

Benjamin Horwitz; Carolyn Hoskinson
Subject: Inspectors: Help EPA Investigate Biofuels Compatibility with UST Equipment

Dear RPMs and ASTSWMO,

As you know, the National UST Biofuels Team is working on various biofuels-related research projects. We'd like to inform you of two research projects in which you might be interested.

(1) Forensic analysis of failed or degraded components from UST systems. We hope to identify one or two UST components (tank, pipe, submersible turbine pump and associated components, etc.) that failed or is severely degraded, and for which we have reason to believe the failure or degradation had something to do with the materials in the component being incompatible with the fuel.

NOTE: We do not anticipate that we will be able to perform a large number of forensic analyses with the amount of funding we have, so each project suggested to us will be carefully considered and weighed against other potential sites.

- Must physically obtain the equipment (or, in the case of tanks or piping, a section of it) and send it to a forensics lab. The lab will work with the site owner to collect additional information and samples, and perform analytical testing on the failed component to understand the failure mechanism.
- Targeting sites in which the tank owner is willing to cooperate with the contractor by providing information, fuel samples, and possibly the failed UST component.
- Outcome will be a report detailing the failure and providing a theory of what caused the release.

(2) Impact of microbes on UST equipment. Specifically, we are going to test a theory that microbes can live in tanks that contain water, and some of these microbes may be producing metabolic by-products that can degrade UST system materials.

NOTE: Due to the limited number of available test kits, EPA anticipates being able to work on 1-2 sites per month.

- Need to identify sites with water in the bottom of the tanks. EPA will send out a test kit, with instructions detailing how the inspector or another individual should collect samples from both the fuel and the aqueous dense layer (a.k.a. "water bottom") in the tank.
- Inspector or another individual will send the test kit back to EPA's Kerr Center in Ada, OK, for analysis.
- Outcome of this project will be a report describing the correlation between tanks with water bottoms and the kinds of microbes that thrive there. This project may also inform us what additional research is needed related to microbial growth in tanks and how microbes affect compatibility.

For both of these projects, we will need to rely on UST inspectors or others in the field to help us identify candidate sites for testing. Forensic analysis project: failed or severely degraded UST equipment. Impact of microbes project: fuel and water samples from tanks with water bottoms. EPA will cover the cost of shipping and will provide detailed shipping instructions for anyone who wishes to participate in this study.

We know UST inspectors see softening of plastics, degradation of fiberglass tanks, and corrosion of metallic UST components in the field, and want to invite you to share your knowledge and experience by participating in this research. Although this research is limited to a very small number of actual tank sites, we would like to understand how prevalent or limited the scope of your issue is, so please continue to let us know about unusual situations you see in the field – and send photos if you are able.

The attached document summarizes what we are looking for. Please share this with your inspectors, and let me know if you have any questions or would like additional information.

(See attached file: UST Biofuels Research - Notification Plan_Aug12.docx)

Thanks,

The EPA UST Biofuels Team

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Michael Pomes | (913) 551-7216

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hwang.jack@epa.gov*(See attached file: Pipe Failure Notification 10-Aug-2012.pdf)(See attached file: Notice of Finding - Pipe Incompatibility - 13-Jan-2012.pdf)*

----- Message from "Juranty, Mike" <Michael.Juranty@des.nh.gov> on Mon, 27 Aug 2012 08:41:52 -0400 -----

To: "Daniel, Robert" <Robert.Daniel@des.nh.gov>, "Ford, John R." <John.Ford@des.nh.gov>
Subject: FW: TCI piping gone bad?

FYI - Yellow pipe pics from Missouri for your visual enjoyment

-----Original Message-----
From: Peters, Heather [mailto:heather.peters@dnr.mo.gov]
Sent: Friday, August 24, 2012 2:00 PM
To: William Moore; Gregory Bareta; Helen Robbins; Lamar Bradley; Juranty, Mike; Peter Rollo; Marcia Poxson; Shaheer Muhanna; Tim Smith
Subject: TCI piping gone bad?

Thought you would find these interesting… and yep, it's in operation… normally we only see this that bad when the pipe bursts…

Heather Peters
Environmental Specialist
Tanks Compliance/Enforcement
(573) 751-7877*(See attached file: 8271-2012-08-07-16-41-20-0012.JPG)(See attached file: 8271-2012-08-07-16-41-20-0013.JPG)(See attached file: 8271-2012-08-07-16-41-20-0017.JPG)(See attached file: 1 - premium stp sump.JPG)(See attached file: 2 - premium stp sump - view accentuating bends in flex pipe.JPG)(See attached file: 3 - premium stp sump - side view of flex pipe toward sump entry.JPG)(See attached file: 4 - premium stp sump - close-up of end-coupling.JPG)*